siliconcoach
video analysis solutions

INTRODUCTION TO VIDEO ANALYSIS

USING SILICONCOACH TIMEWARP

clinical education retail sport

This training manual is intended to accompany a siliconcoach training session and is designed as a reference tool to help deliver the interactive parts of the course.

For more in-depth assistance please refer to the Help menu in siliconcoach (press F1 in Pro) or download the comprehensive siliconcoach Timewarp User Manual available from the siliconcoach Timewarp support website (http://www.siliconcoach.com/SupportCentres/#support_centers)

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NOTE:

This manual is for TW V3 and TW V4 has a slightly different interface however the same principles apply,

What is TimeWarp?

Timewarp is a software program that allows you to watch delayed video playback of a movement immediately after it is performed. Once the required time delay is set, the operation is hands-free and provides instant visual feedback.

- Allows athletes to study their own technique
- Athletes can train on their own using technique guidelines prepared by a coach
- Easy to use, just set the required time delay
- Tag and loop video, watch in slow motion or pause for a closer look - all whilst Timewarp continues to record 'live'.
- Simple to use drawing tools provide an onscreen reference for self-assessment.
- Capture and review using voice commands or remote control.
- Save and export clips to Siliconcoach Pro for detailed analysis.
- See the concept explained at http://www.siliconcoach.com/SupportCentres/#support_centers and choose the TimeWarp Support Centre

Equipment Considerations

The following diagram illustrates a typical video analysis system:

- Camera
- Laptop or PC
- Video cable
- Tripod (highly recommended)

Cameras

- All major brand Mini DV camcorders are compatible.
- A 3CCD camera is optional and gives same resolution but better colour.
- A stills camera that captures video or web cams do not provide high quality video for video analysis.
- DVD cameras and most Hard Disk cameras to not have a live output so you will need an AV to USB converter to work with TimeWarp.
- Refer to http://www.siliconcoach.com/SupportCentres/#support_centers and choose HARDWARE from the TimeWarp Support Centre.

Shutter speed

- The shutter controls the period of time that the videotape is exposed to the image/light.
- If the image is moving at high speeds, then a low shutter speed (1/120) will result in a blurred image.
- A high shutter speed (1/500 to 1/1000) will result in a clear picture.
- The shutter speed on a video camera can be manually controlled depending on the activity being filmed.
- On many cameras you do not have total manual control of the shutter speed but these cameras can be set to a SPORTS mode, an icon of a runner or a golfer (in the case of Sony cameras) will appear in the LCD screen when sports mode is ON.
- Refer to http://www.siliconcoach.com/SupportCentres/#support_centers and choose GETTING GOOD VIDEO from the TimeWarp Support Centre.

Additional Lighting

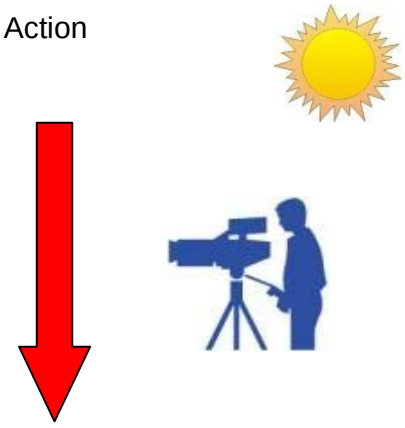
- As the shutter speed increases, less light is able to reach the videotape, causing the image to become darker or blurred or both.
- Ensure you have good lighting if you intend to video at high shutter speeds.
- If filming indoors with a high speed shutter additional lighting (spot lights) will generally be required.
- Refer to http://www.siliconcoach.com/SupportCentres/#support_centers and choose GETTING GOOD VIDEO from the TimeWarp Support Centre.

Focus Controls

Most cameras have an auto focus capability.

- In many sporting set-ups it is recommended that you use the MANUAL FOCUS mode because it prevents the camera focusing on an unwanted object in the background or foreground as the subject moves.
- As a rule of thumb, use the manual focus whenever possible.
- Refer to http://www.siliconcoach.com/SupportCentres/#support_centers and choose GETTING GOOD VIDEO from the TimeWarp Support Centre.

Set-up considerations for filming



- The plane of movement will need to be perpendicular to the camera if you intend to make measurements on screen later.
- Is the camera positioned on a tripod to reduce vibrations?
- Is the sun or light going to cast shadows on the event being captured? Lighting should come from behind the camera and direct light towards the event but not in the eyes of the subject.
- Will the whole event be captured without panning the camera? Panning introduces perspective error.
- Is the subject wearing clothing that will obscure their actions or limb end point positions? Where possible encourage fitted clothing to be worn.
- Refer to http://www.siliconcoach.com/SupportCentres/#support_centers and choose GETTING GOOD VIDEO from the TimeWarp Support Centre.

Using the software

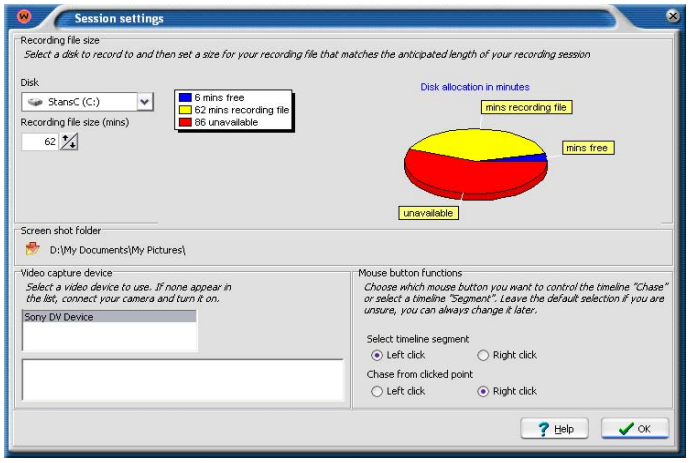
NOTE: This manual is for TW V3 and TW V4 has a slightly different interface however the same principles apply

Adjusting session settings

- The opening screen of Timewarp allows you to set the recording sessions settings.
- The more free space you have on your hard drive, the longer you can record for.
- The recorded movie file stores to temporary memory, and is erased when Timewarp is closed.

Adjust size of recording file →

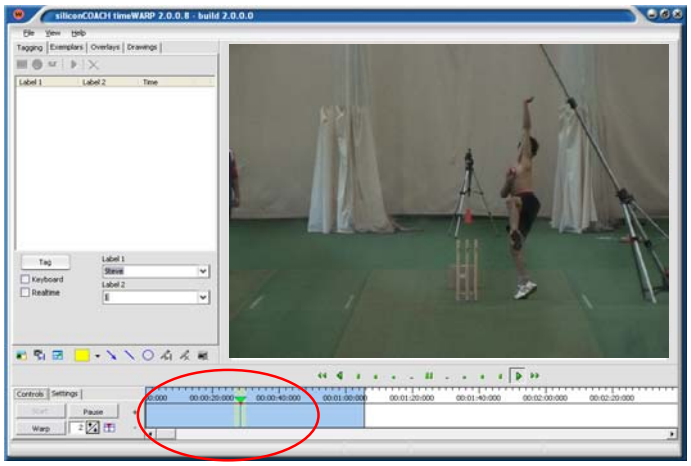
Detects whether camera is connected →


Session settings
Recording file size
Select a disk to record to and then set a size for your recording file that matches the anticipated length of your recording session
Disk
StansC (C:)
Recording file size (mins)
62
6 mins free
62 mins recording file
86 unavailable
Disk allocation in minutes
mins recording file
mins free
unavailable
Screen shot folder
D:\My Documents\My Pictures\
Video capture device
Select a video device to use. If none appear in the list, connect your camera and turn it on.
Sony DV Device
Mouse button functions
Choose which mouse button you want to control the timeline "Chase" or select a timeline "Segment". Leave the default selection if you are unsure, you can always change it later.
Select timeline segment
Left click
Right click
Chase from clicked point
Left click
Right click
Help
OK

Setting the Delay

The delay can be adjusted from a few seconds, to minutes, to an hour.

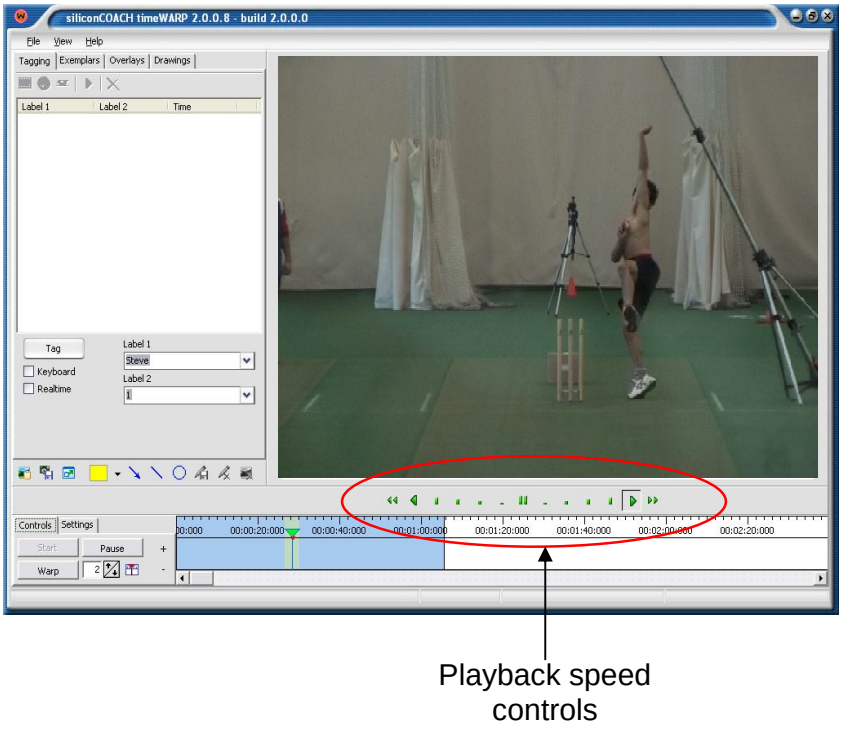
- The time delay can be changed before or after you press 'Start'.
- When the warp has started, the preview screen will change to show the delayed footage (no longer real-time live capture)



Replaying and Looping

You can replay your captured video from any point in time, or loop it repeatedly for more detailed review.

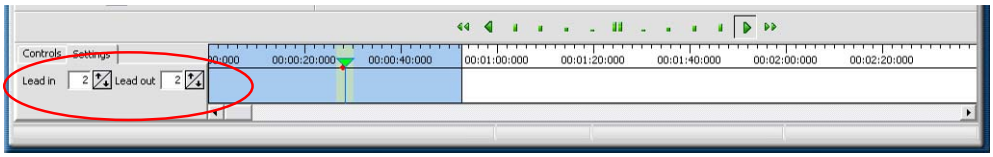
- Left click on the blue timeline to start looping a segment.
- Right click on the blue timeline to start replaying from that point in time.
- You can adjust the speed of playback using the button controls.



Setting lead-in and lead-out times

You can adjust the length of the loop to any duration you choose.

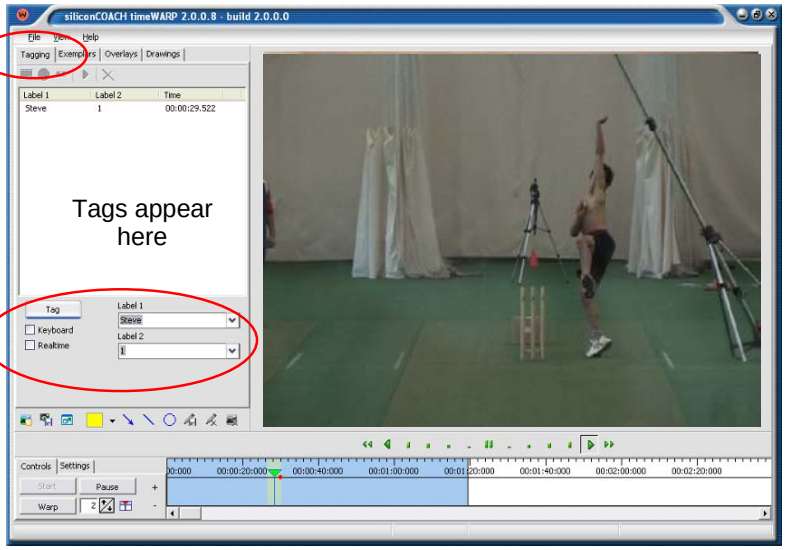
- Click on the 'Settings' tab
- Adjust the number of seconds before the click point (lead-in) and after the click point (lead-out). The total duration of the loop is the lead-in plus the lead-out time.



Tagging Events

In timewarp you can 'time stamp' your loop as a tag so you can easily review important events that have occurred during the timeline.

1. Enter a tag name in the label box.
2. Press the 'Tag' button
3. Your tag will appear in the file list.
4. Repeat as necessary for each tag.
5. Double click the file name to view the saved tag in the preview window.

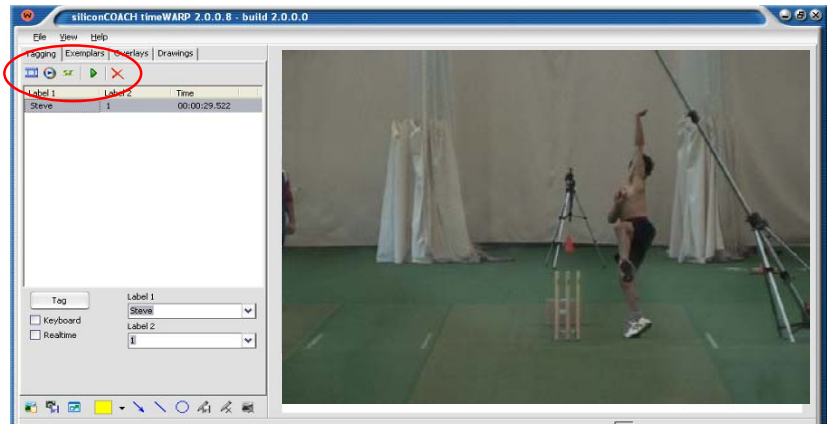


Note: Choose '*Realtime'* if you wish to tag events as they happen live (and not in the delayed screen). Choose '*Keyboard'* to assign a shortcut key 1-9 to your *Label 1* list of descriptors.

Exporting video clips

You can export your tagged segments to view in another media program at a later date.

- Highlight the name of the tagged segment you want to export
- Whilst your tagged file is selected, press the appropriate output icon.
- Export options include AVI, WMV, or a siliconcoach presentation for use in Pro.

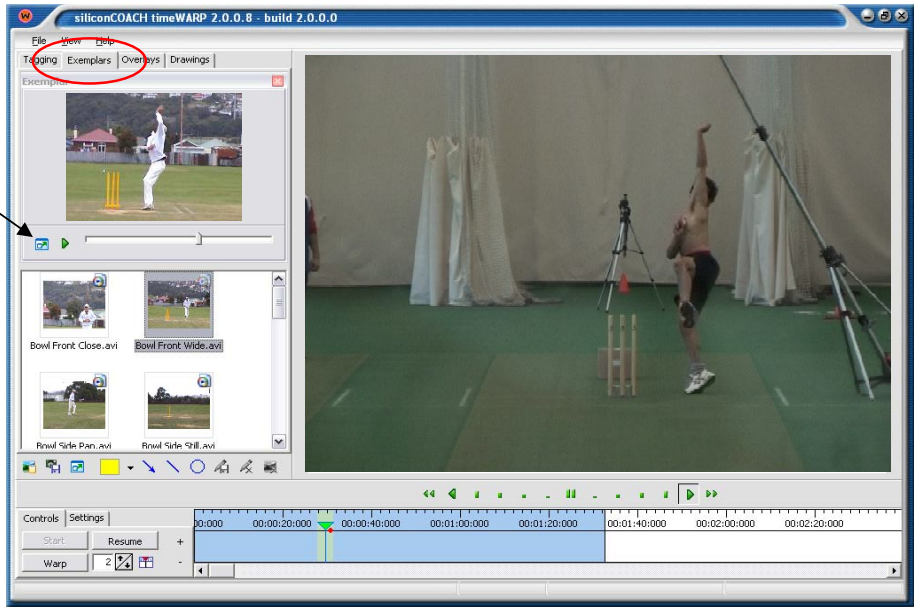


Exemplars

You can play movies for comparison whilst still capturing on the main screen.

- Click the Exemplar tab
- Navigate to the movie you wish to view and double-click the file.
- The exemplar movie will start to play. You can view either in a small or large window.

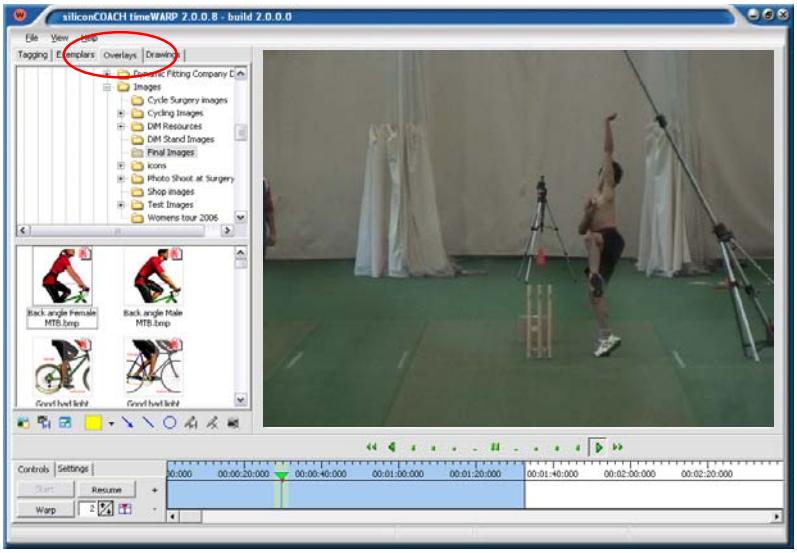
Click for larger movie, then resize to suit



Overlays

You can overlay a still image over your video for analysis purposes. However, you cannot overlay another video, use Pro to do this.

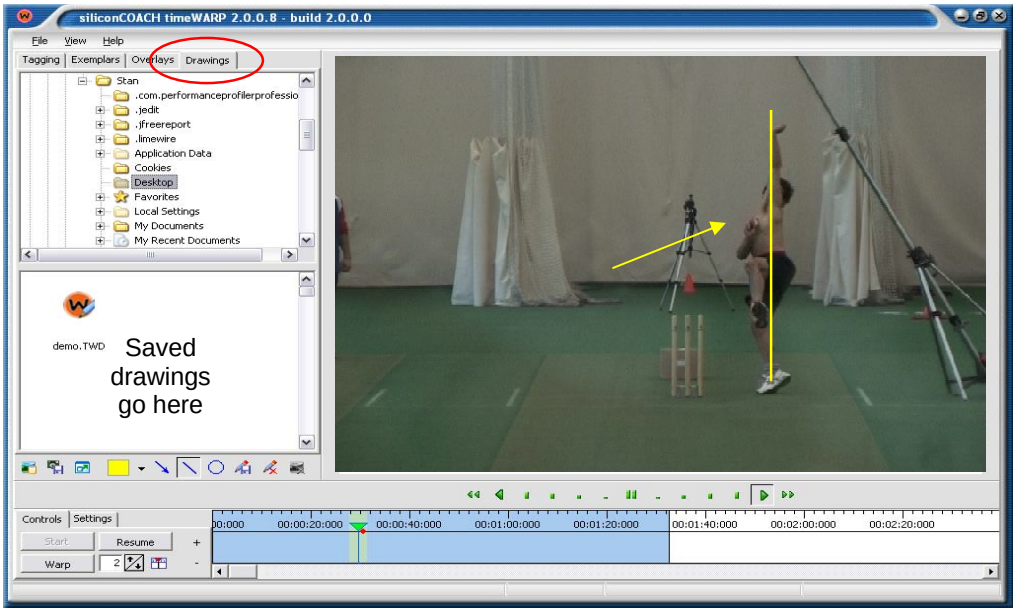
- Click on the Overlay tab
- Navigate to and double-click a bitmap file in your folder.
- The still image will appear over your preview screen.
- To create a new bitmap file refer to the Help menu



Drawings

You can draw on the screen, then save the drawings and overlay them on future timewarp sessions

- Click on the Drawings tab
- Create your drawings on the screen then press the 'Save drawings' icon.
- Your drawings will be saved into the Drawings library



Speech Recognition and Remote Control (advanced features)

- You can use voice and basic word commands to control the timewarp software without the keyboard.
- Timewarp can also be controlled using a remote control allowing you to move away from the laptop during a session.
- See the HELP menu for more detailed information and set-up instructions.

Checklist:

At the end of the training course you should have an understanding of:

- What the timewarp software does and how it can be used in your coaching setting
- The equipment needed to use timewarp effectively
- How to adjust the timewarp settings
- How to set a delay on screen
- How to replay and loop key events in the timeline
- How to set lead-in and lead-out times
- How to tag events
- How to export tagged events in various formats
- How to use an exemplar video alongside the timewarp screen
- How to add a still image overlay
- How to draw lines, arrows, and shapes on the screen

NOTES: